

## HYPERTENSION, LIPIDS AND PREVENTION

### ARE POST-TREATMENT LOW DENSITY LIPOPROTEIN SUBCLASS PATTERN ANALYSES POTENTIALLY MISLEADING?

ACC Poster Contributions  
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**Background:** Therapies that lower LDL-C often increase the proportion of small, LDL particles (Pattern B), which may be misinterpreted as a worsening of atherosclerotic CHD risk. Pre-treatment diagnostic vs post-treatment efficacy lipoprotein pattern analysis may have different clinical implications.

**Methods:** Hypercholesterolemic patients at high CHD risk were stabilized on atorvastatin (AT) 40 mg followed by randomization to ezetimibe (EZ) 10 mg + AT 40 mg vs doubling of AT to 80 mg for 6 weeks. Vertical Auto Profile-II analysis was performed on the overall population, as well as on those grouped by baseline triglyceride (TG) level <150 mg/dL or ≥150 mg/dL.

**Results:** In the full data set and in the higher/lower TG subsets, the proportion of Pattern B increased with both treatments. Both EZ+AT and AT reduced LDL-C levels and decreased the cholesterol content of most LDL subfractions (LDL1-4). Together, the cholesterol content in the larger LDL1 and LDL2 subfractions was generally reduced more than in the smaller LDL3 and LDL4 subfractions together. Both treatments reduced apo B, reflecting a reduction in overall atherogenic lipoprotein particle number.

**Conclusions:** LDL-C lowering therapy may disproportionately reduce larger (more easily cleared) LDL particles, and thus increase Pattern B. A post-treatment change to Pattern B alone may be misleading in assessing the efficacy of cholesterol lowering therapy.

		Pattern B (%)	LDL1*	LDL2*	LDL3*	LDL4*	LDL-C†	Apo B†
A80 mg (N=222)	Baseline, mg/dL (SD)	128/222 (57.7)	14.0 (6.5)	16.5 (12.1)	41.5 (13.0)	9.0 (7.4)	89.7 (16.0)	102.0 (18.5)
	Week 6, mg/dL (SD)	141/222 (63.5)	12.0 (4.7)	15.0 (10.2)	37.0 (13.0)	9.0 (7.4)	79.1 (19.9)	93.2 (20.0)
	% change (SD)	--	-10.5 (30.4)	-16.5 (48.7)	-10.0 (25.6)	0.0 (74.0)	-11.0 (1.1)	-7.7 (0.9)
A40 mg + EZ (N=225)	Baseline, mg/dL (SD)	127/225 (56.4)	14.0 (4.7)	17.0 (14.9)	38.0 (14.0)	9.0 (7.4)	88.6 (16.3)	101.1 (18.8)
	Week 6, mg/dL (SD)	147/225 (65.3)	10.0 (3.7)	13.0 (7.4)	29.0 (11.2)	8.0 (4.7)	64.1 (19.9)	82.5 (19.3)
	% change (SD)	--	-26.7 (27.5)	-23.3 (48.1)	-23.8 (21.9)	0.0 (65.9)	-27.4 (1.1)	-17.8 (0.9)

\*Values presented as median and SD is robust standard deviation  
†Values presented as mean (standard error), for LDL-C, N=279 for A80 mg and N=277 for A40 mg + EZ; and for Apo B, N=276 for A80 mg and N=275 for A40 mg + EZ